Chapter 12

Keeping the Process Going

This plan identifies a broad range of existing nonpoint programs and sets in motion a series of additional actions designed to improve the overall program effectiveness. There are several ways to determine whether the implementation activities have led to water quality improvements. Certainly, attaining water quality standards will be a primary indicator, but there will be others that will count toward plan success.

Roles in Implementation

There are several entities involved with implementing this plan. In Chapter 6 we identified them and the roles each plays:

The **Water Quality Program** of the **Department of Ecology** is responsible for overseeing the implementation of this plan. That means Ecology will be the primary driver in coordinating plan activities, compiling progress reports, and reporting back to the Federal Agencies. Ecology will also implement many of the actions identified in the plan. Ecology will also take the lead in coordinating activities with the state agency workgroup.

State Agency Workgroup will meet each year to discuss general work plan activities. At these meetings, progress will be reviewed and adjustments made as necessary to work plans and schedules. More frequent meetings will be held between partnering agencies to plan and carry out projects requiring coordination. The State Agency Workgroup will report each year to the Water Quality Partnership. (See milestones under "General Needs" in Table 12.1.) Presentations will be made as appropriate on products completed and activities underway. The committee will incorporate feedback into the work plan as appropriate. Finally, a biannual public workshop will be held to discuss the plan progress and to solicit new ideas and tools from local implementers.

Water Quality Partnership is an advisory group of industries, local governments, tribes, environmental organizations, and others who assist the Water Quality Program at Ecology with general program direction. Ecology will forward any advice this group offers about nonpoint pollution control efforts to the State Agency Workgroup.

Local Governments, Tribes, and Special Purpose Districts are the on-the-ground implementers of many nonpoint pollution control activities. This nonpoint management plan relies heavily on the continued commitment of energy and resources by these entities. Many current and planned actions are designed to assist them with their implementation efforts. Ecology will monitor the progress of the plan and keep contact with these implementers to determine plan success. Although they often use financial assistance from state agencies, these agencies do not direct local entities' activities to control nonpoint pollution unless there is a state law or permit involved. However, Ecology and

other agencies can promote certain policies and priorities through the way they distribute financial assistance. It is imperative the agencies make these priorities clear.

Progress Review

Progress toward meeting the goals and objectives of the plan will be evaluated and discussed by the State Agency Workgroup. Members of this workgroup have access to their agencies' data, programs, and activities at the local level. They will work closely to align activities and support each other in the broader direction of plan activities.

How success will be determined

Four questions will direct the type of benchmarks that will indicate the success of this strategy:
1. Is water quality improving?
2. Are the programs identified in the strategy working?
3. Is this statewide nonpoint strategy effective?
4. What changes are needed in this strategy to improve effectiveness?

Question #1: Is Water Quality Improving?

This question will be answered principally by evaluating three sets of information:

1. Baseline and ambient monitoring
2. Violation frequency
3. 303(d) listed water bodies

Baseline and ambient monitoring will provide long-term trend information on several water quality parameters around the state. These data are relatively gross in nature due to the approach used. However, they do provide a long-term look at conditions across the state.

Violation frequency is another approach to water quality analysis. This involves looking at the same ambient data, but looking for the frequency of violation as an indicator of change. It is not a trend analysis, but does provide a sense of how often a water body is out compliance over time.

Finally, an examination of the biennial 303(d) list will indicate which water bodies have met water quality standards. This is a true indicator of water quality improvement at a site or throughout a watershed. Data from across the state is used to list water bodies not meeting State water quality standards.

These three analyses will be carried out by Ecology staff on an annual basis and reported to EPA and other appropriate advisory groups.

Question #2: Are programs identified in the strategy effective?

At this time, there is no overarching approach to determining the effectiveness of the programs included in this plan. Due to the concerns surrounding salmon, shellfish, and drinking water, numerous efforts over the last few years have advanced our understanding considerably in many areas, particularly forest management. Rules continue to be developed from studies over the last 12 years designed to determine how to adequately protect public resources. Work in this area will continue with the advent of new practices mandated by the Forests and Fish Report.

Effectiveness of the programs relates to both implementation of BMPs and the effectiveness of BMPs. The state will continue effectiveness monitoring of BMPs and will track BMP implementation activities.

A partial list of the different types of monitoring programs is shown below. We expect this list to change as further efforts to protect key resources continue.

1. Agricultural BMPs: Improvements in agricultural BMPs have made significant advances as well in the last 10 years. However, there are still numerous questions about effectiveness – particularly in the area of riparian protection. In many cases, these concerns have as much to do with level of implementation (under voluntary programs) as they do with the effectiveness of the BMP itself. The Agriculture Fish and Water process has recently started to evaluate changes to the Field Office Technical Guides used by NRCS and practices used by irrigators. The process will result in practices that meet requirements of the Clean Water Act and Endangered Species Act.

2. Stormwater BMPs: Perhaps the biggest area of concern is urban stormwater. Researchers have shown that many of the design standards implemented over the last 10 years fail to protect salmon habitat. Studies have shown that the amount of impervious area of a watershed has a direct effect on habitat. The Endangered Species Act requirements are causing resource agencies and local governments to study the problem very carefully and to look for other innovative land use approaches. A new stormwater management plan for the state is being considered which will likely include an evaluation of new stormwater BMPs.

3. Post-TMDL monitoring. Post-TMDL monitoring is conducted to verify that the pollutant controls resulted in the water body meeting water quality standards. It also tests the effectiveness of the management programs carried out as part of the implementation plan. Monitoring must be carried out throughout the life of the TMDL. An adequate monitoring program tracks three components:

    - implementation of BMPs or other controls;
    - water quality improvements; and
    - progress toward meeting water quality standards (targets).

4. National Monitoring Project. Now in its eighth year, this long-term monitoring program evaluates the effects of non-point pollution control measures on water quality in several small Puget Sound watersheds. The project involves monitoring water quality and BMPs over ten years, using paired watershed and single station design. This project, one of about 25 similar concurrent projects around the country, is funded by the U.S. Environmental Protection Agency and carried out by Ecology.

5. Chehalis Fisheries Restoration Program Evaluation Project. Ecology and the U.S. Fish and Wildlife Service are monitoring the effectiveness of fisheries restoration projects in the Chehalis basin. This six-year project involves a variety of monitoring in more than ten sub-basins in the Chehalis watershed. Effectiveness evaluation includes water quality monitoring in wet and dry seasons for bacteria, nutrients, turbidity, total suspended solids, pH, temperature, and conductivity; benthic macroinvertebrate sampling; and continuous dry-season temperature monitoring.

6. Evaluation of forestry rules (BMPs). This has been a highly successful cooperative process over the last 12 years and has resulted in fundamental changes to numerous aspects of the Forest Practices Rules for Washington. New forestry BMPs have been developed and documented in the Forests and Fish report. The legislature has directed the Forest Practice Board to move forward with formal rule adoption. These new rules will set the standard for salmon and water quality protection in the state. They will likely be adopted in 2001. Agencies and tribes will evaluate the effectiveness of these BMPs in the years following implementation, particularly those associated with riparian protection, road management, and exemptions for small landowners.

7. Ground water monitoring of dairy BMPs. The program is conducting a long-term ground water monitoring evaluation of the effectiveness of a dairy waste storage pond in the Beaver Creek sub-basin of the Chehalis River watershed.

8. Other efforts. Many other agencies and local governments are looking at effectiveness. Obviously not all of these efforts have been documented at this time. Additional programs will be recognized in the plan before it goes to final printing.

Question #3: Is the Nonpoint Source Management Plan Effective?

It will be important to assess the effectiveness of the overall plan on a regular basis (every five years) so that changes can be made to add emphasis or refocus efforts where they are most needed. To provide a framework for answering this question, a table of success measures (Table 12.1) has been developed. This table lists the measurements we will use to determine the effectiveness for the State's NPS efforts. Much of this information is required or normally collected as part of agencies' program activities. It also includes "performance measures" for the first two years of the Salmon Recovery Strategy. The list may be modified in the future to support additional information needs and trend analyses.

We have identified performance measures, milestones, monitoring activity, and the reporting agency.

Performance Measures

To evaluate progress toward the plan goal, data from numerous sources will be collated and included in the annual report. Results will be reported as an action that directly or indirectly lead to cleaner water, like implementation of BMPs; or as a measurement of environmental conditions, like actual water quality measurements. The performance measures relate directly to actions listed in Table 9.1.

Milestones

Milestones is the specific measurable outcome that we hope to achieve. If the outcomes are achieved but water quality is still not improving, then we will make revisions to the plan. If outcomes have not been achieved, then we can determine if programs and BMPs have not been implemented and make efforts to correct that, or whether the desired outcomes were unrealistic. Outcomes will be reviewed every year.

Monitoring Activity

Each outcome will be monitored, and results will be reported to Ecology. The type of monitoring activity that is necessary for each specific milestone has been identified.

Reporting Agency

Reporting agency is not necessarily the implementing entity, but is one who is responsible for compiling information.

Table 12.1

Measurements of Success

Plan Action Number	Performance Measures	Milestone	Monitoring Activity	Reporting Agencies
	Agriculture			
Ag 13	Dairies inspected	100% of dairies inspected by October 1, 2000	Progress Reports	ECY, CC, NRCS
Ag 13	Dairy nutrient management plans approved; fully implemented	100% of dairies with approved plans by July 1, 2002	Progress Reports	ECY, CC, NRCS
Ag 13	Riparian habitat on agricultural lands that is protected, restored, or preserved.	Milestones will be determined later by the Salmon Recovery Office	Progress Reports	Salmon Strategy
Ag 4	Number of field office technical guides for riparian protection updated	FOTGs updated by December 31, 2001	Progress Reports	CC, NRCS
Ag 7	Quantity of water saved and retained in-stream from irrigation water conservation.	Milestones will be determined later by the Salmon Recovery Office	Ambient Monitoring	Salmon Strategy
Ag 8	Number of pesticide collection events	6 events per year	Progress Reports	WSDA
Ag 13	Farm plans completed statewide	50% of farms by 2003 75% of farms by 2008	Progress Reports	NRCS, CC
Ag 12	Number of landowners served through CRP and CREP contracts	750 landowners by FY2000 2,000 landowners by FY2001	Progress Reports	NRCS, FSA, CC
Ag 12	Number of acres under contract through CRP and CREP	25,000 acres by FY2000 50,000 acres by FY2001 Targets beyond 2001 will be determined later	Progress Reports	NRCS, FSA, CC
	Forestry			
For 2	Number of Habitat Conservation Plans	1 HCP per year	Progress	DNR, NMFS,

	approved		Reports	USFWS
For 4	Miles of forest road with approved road maintenance plans	100% of large landowner roads under plan by 2004. Restoration of those roads completed by 2014	Progress Reports	DNR
For 1	Miles of forest riparian areas protected with new "Forests and Fish" buffers.	Miles will be determined by 12/31/2000	Evaluation of BMPs	Salmon Strategy
For 1	New Forest Practice regulations adopted	Regulations adopted in June 2001	Progress Reports	DNR
For 1	New emergency Forest Practices regulations adopted	Emergency Rules adopted in January 2000	Progress Reports	
For 6	Miles of federal roads repaired or abandoned	Milestone will be established through compliance schedules contained in the proposed US Forest Service MOA revisions	Evaluation of BMPs	USFS
	Urban			
Urb 23	Percent of state highways that meet new stormwater requirements	Number of additional miles per year will be determined later	Progress reports	WSDOT
Urb 1	Number of Counties and cities planning under GMA	Target numbers for 2003 will be determined by DCTED	Progress Reports	DCTED
Urb 1	Percent of local governments that implement key salmon recovery recommendations and requirements	Percent targets have not been determined yet	Progress Reports	Salmon Strategy
Urb 6	Number of communities within Puget Sound that have met target dates for implementing the Puget Sound Water Quality Management Plan	All communities to meet target dates by 2000	Progress Reports	PSWQAT, ECY, locals
Urb13	Number of on-site operation and maintenance programs implemented	All counties to begin implementing by 2005	Progress Reports	DOH, PSWQAT
Urb 13	New on-site technologies approved and promoted	Process for review and approval of new technologies developed by June 2000	Progress Reports	DOH
Urb 11	Number of communities within Puget Sound that have met target dates for adopting onsite	All communities to meet target dates by 2000	Progress Reports	PSWQAT DOH

	operation and maintenance programs			
Urb 4	Washington State Stormwater Management Manual approved	Manual approved in year 2000	Progress Reports	
	Hydromodification			
Hyd 1	Integrated Stream Corridor Guidelines	Guidelines adopted in 2000	Progress Reports	ECY, DOT, WDFW
Hyd 3	Develop technical guidance for salmon restoration projects	Timeline and content will be determined by the SRO	Progress Reports	Salmon Strategy
	Recreation			
Rec 3	ORV facilities with water quality plans	2 new ORV facilities per year	Progress Reports	IAC, counties DNR
Rec 7	Marinas with operating marine sanitation pump-outs	10 new marinas by 2003	Progress Reports	Parks
	Loss of Aquatic Ecosystems			
LAE 8	Lakes in monitoring network that meet water quality standards	25% of lakes by 2008; 50% of lakes by 2013	Project Monitoring	ECY
LAE 11	Riparian areas restored through JFE and WCC programs	25 miles restored per year	BMP Evaluation	ECY, DNR
LAE 12	Rivers and streams have sufficient clean, cool water to support salmonids. Riparian and estuarine habitat protected and restored.	Miles of riparian and freshwater habitat to be determined by the Salmon Recovery Office	Ambient Monitoring	Salmon Strategy
LAE 6 and 7	Net gain of wetlands function and acreage and of other aquatic and riparian habitat	Net increase to be determined by the Salmon Recovery Office	Progress Reports	Salmon Strategy
	Education			
Ed 6	Watershed-specific Project WET teacher workshops conducted	10-15 workshops/year	Progress Reports	ECY
Ed 7	Columbia Watershed curriculum	Curriculum completed by the end of 2000	Progress Reports	GCEE
Ed 8	Magic Apple teacher grants awarded	9 grants/year	Progress Reports	ECY
Ed 9	Children's water festivals sponsored	1 festival/year	Progress	ECY with local

			Reports	agency
Ed 13	Campaigns and materials for narrowly focused target groups	1 new audience targeted/year	Progress Reports	ECY
Ed 14	Number of Master Watershed Steward programs taught; number of hours donated by trained volunteers on stewardship projects	16 classes of 25 people each /year; 75 hours contributed per graduate; =30,000 hours/year or 120,000 hrs by the end of 2003.	Progress Reports	GCEE
Ed 18	Online, central repository for volunteer monitors' data completed and operating/number of datasets of known quality entered into repository	100 data sets entered/year	Progress Reports	ECY
Ed 17	Provide technical help for volunteer monitors	Every question answered	Progress Reports	ECY
Ed 10	Public Information and Education ("PIE") grants funded	25grants per biennium	Progress Reports	PSAT
General Needs				
Gen 2	Number of Watershed Management Act (2514) Plans approved with water quality element	15 plans approved by December 31, 2003	Progress Reports	ECY
Gen 5	Number of Total Maximum Daily Loads submitted to EPA	249TMDLs submitted by 2003 552TMDLs submitted by 2008 765TMDLs submitted by 2013	Progress Reports	ECY
Gen 10	Number of Shellfish upgrades and re-certification status	10,000 acres recertified by 2008	Project Monitoring	DOH
Na	State Agency Workgroup formed and meets annually	2 meetings per year	Progress Reports	State agencies
Gen 18	Water quality conditions for temperature, pH, fecal coliform, and dissolved oxygen	10 % of ambient monitoring sites report no violations by 2009. 25% of ambient monitoring sites report no violations by 2013.	Ambient Monitoring	ECY
Gen 18	Sample failure rates at ambient monitoring sites for bacteria, temperature, pH, and dissolved oxygen in rivers	25% reduction in sample failure rates by 2009; 50% reduction in sample failure rates by 2013.	Ambient Monitoring	All

Gen 19	Salmon recovery regions with regional response plans approved by the Salmon Recovery Office and NMFS	Numbers have not yet been established	Progress Reports	Salmon Strategy
na	State and Fed grant, loan and contract funding for NPS projects, Watershed Planning and salmon recovery efforts	>$120 million per year from 2000 - 2013	Progress Reports	ECY, DNR, EPA, IAC, CC, DOT, WDFW, NRCS, BPA, NMFS, FWS, USFS, DCTED, FSA, NOAA
na	Meet all 5 year CZARA obligations Meet all 15 year CZARA obligations	Met by year 2004 Met by year 2013	Progress Reports	ECY
Gen 24	NPS enforcement actions	200 actions/year from 2000 - 2013	Progress Reports	WDFW, DNR, ECY, locals
na	Nonpoint Plan on Ecology web site and cross referenced by other resource agencies	Plan available by 2/2000, updated 2/2005, 2/2020, 2/2014	Progress Reports	Agencies, Tribes

Agency Progress Reports

Each agency participating in this plan implementation will be asked to submit an annual report to Ecology describing the following:

1. Efforts to implement activities they have agreed to implement in Chapter 9;
2. Success measures describe in this chapter;
3. Any significant changes to implementation or funding of existing programs.

Reporting on progress on cooperative efforts involving other entities not part of the State Agency Workgroup will also be expected. The Salmon Recovery Office will report on performance measures identified in the Salmon Recovery Strategy.

All the information gathered will be annually tabulated by Ecology and used by State Agency Workgroup to make decisions about overall Plan effectiveness. It will also be made available to the general public using the Ecology web site.

Question #4: What changes in strategy are needed to improve effectiveness?

The State Agency Workgroup will meet annually to accomplish the following:

1. Review water quality reports
2. Review various implementation reports (as available)
3. Review progress on implementation commitments (Chapter 9)
4. Collaborate on new ideas for solving nonpoint source pollution
5. Advise Ecology on changes needed to the 319 plan

This will also be a good opportunity to coordinate nonpoint control programs and co-manage data.

It is likely that commitments in the plan will need to be revisited throughout the plan implementation period (five years). Many of the commitments are actions that have a high likelihood of being carried out because the program already exists and the funding sources are relatively assured. In a number of cases, actions identified in the plan are limited by funding or by the need for many entities to participate in the outcome. In these cases, the progress will be difficult to predict. These annual reviews will be important to make sure the overall plan direction is maintained.

Five years and beyond

The actions identified in the plan will require a long-term commitment from federal, tribal, state, local and private resources. There is no quick fix to pollution that is as endemic as nonpoint pollution. Although the scope of this plan is actions to be taken within five years, the framework and efforts embodied in the plan will continue many

more years. During the five years of this plan, the focus of many agencies will be to develop the necessary programs to implement the actions in the plan. Each agency will determine its own timeline for the actions, and report the timeline to the State Agency Workgroup. Ecology will track these timelines and project completion for the Workgroup. The Workgroup will also coordinated the timing of inter-related actions.

As programs are developed, they will implemented on the ground by the appropriate groups, as needed. For example, landowners will put in place BMPs, agencies will provide technical and financial assistance when possible. Examples of this program development follow:

Ag 12: Actively engage agricultural producer groups in developing and implementing Best Management Practices. During program development, such as issues as agency roles, the process for approving BMPs, the linkage to the State Revolving Fund, and prioritization of BMPs for implementation will be addressed. In essence, a turn-key operation will be produced that can be customized for each commodity group. Commodity groups will then be approached to develop their BMPs. This process has already been done on a pilot basis, and several deficiencies were identified. Program development will eliminate these deficiencies.

Some 250 agricultural commodities are grown within Washington State. Developing BMPs will require differing amounts of time depending on the size of the commodity group and the complexity of the crop's growth patterns. Beyond the five years, additional commodity groups will be sought, thereby increasing the coverage of agreed upon BMPs until all appropriate groups have established and implemented approved BMPs.

Rec 7: Update the Comprehensive Boat Sewage Management Plan for Washington State. This plan governs the placement of marine sewage facilities in the state. Criteria are established for placement and prioritization of facilities. Timelines are set for the construction of facilities and issues such as required match and maintenance are addressed in the plan. The update of the plan will occur within five years.

Beyond five years, Parks will market the program, and fund the placement of facilities in accordance with the plan until sufficient facilities are available to significantly reduce or eliminate this source of nonpoint pollution.

In addition, the various planning processes such as TMDLs, local watershed plans under chapter 90.82 RCW, salmon recovery limiting analyses under the Salmon Recovery Act, and Puget Sound Watershed Plans under chapter 400-12 WAC (or their equivalent outside the Puget Sound area) will continue to investigate and identify water quality problems across the state. This plan will provide a toolbox of programs to be used in these areas to address the identified problem. The plan also provides a mechanism through the consistent review process and other feedback to develop programs to address unmet needs that may arise.

In summary, during the five years of this plan, agencies will develop the programs necessary to implement the actions identified in the plan, and implement where possible.

Beyond five years, programs will be implemented to the maximum extent needed and where possible within the state, and additional programs will be developed and implemented to manage future identified needs.

Every five years this plan will be updated, including another analysis of management measures. The need for major changes in strategy will be identified at that time. We will again use a coordinated approach for the update.

Washington's NPS Management Plan is a living document. EPA and NOAA require a review and update of the plan on a five-year cycle. The plan is directed to meet the 15-year goal of full implementation of CZARA management measures by 2013. Therefore, all actions indicated as meeting a CZARA management measure must be completed for Washington to be in compliance with CZARA.

The actions of the plan, when taken as a whole, will focus resources in a manner that widens program implementation, improves program effectiveness, and attends to problems not previously addressed. Through increased coordination and cooperation, we can improve the quality of the state's waters and maintain and improve our quality of life.

Appendices

A. Water Quality Summaries

B. Memorandum of Agreement between Ecology and US Forest Service

C. Local Priority Setting Process

D. Responsiveness Summary

E. Letters of Concurrence from Implementing Agencies